The Examiner has rejected claim 4 under 35 U.S.C. 112, second paragraph, as being indefinite. The term "substantially thicker" is indefinite. The specification provides no guidance to one or ordinary skill in the art to determine when the bottom ply should be considered "substantially thicker" than the top ply.

Applicant has deleted the term "substantially" from claim 4.

The Examiner has rejected claim 6 under 35 U.S.C. 112, second paragraph, as being indefinite. The term "enhanced smoothness" is a relative term (aka the smoothness is enhanced" with respect to what?). The original disclosure provides no guidance to one of ordinary skill in the art on how the term should be interpreted.

The term enhanced smoothness is defined on page six of the specification as allowing printing thereon.

The Examiner has rejected claim 8 under 35 U.S.C. 112, second paragraph, as being indefinite. The term "publication grade paper" is indefinite. The term is not defined in the specification, nor does the term have an art accepted meaning. Publication grade paper is defined on page five of the specification as labele paper or other printing and writing grades of paper. Page 11 further defines publication grade paper as MG or MF or other printing, writing or labele grades, or may have printed graphics.

The Examiner has rejected claim 9 under 35 U.S.C. 112, second paragraph, as being indefinite. The term "label stock grade" is indefinite. The term is not defined in the specification, nor does the term have an art accepted meaning.

Labele stock grade is a term of art with an accepted meaning.

The Examiner has rejected claims 1-4 and 6-13 under 35 U.S.C. 103(a) as being unpatentable over Cavagna (US 4,898,752) in view of Peer (US 4,254,173). Cavagna teaches outer packaging materials are made of paperboard comprising unbleached kraft paperboard that has been surface treated on at least one side with a white coating or the like. The white coating may be applied as a thin layer of high quality label paper. The white surface may further have a clay coating applied thereto.

Cavagna does not teach that the paperboard should further comprise a top ply overlaying said white layer. However, Peer teaches a plastic film that can be applied over outer packaging paper materials. The plastic film provides tear resistance to the composite and may be reverse printed on their inner surface. The plastic film is selected

from the group consisting of polyethylene, polypropylene, and PET. Therefore, the examiner takes the position that it would have been obvious to one of ordinary skill in the art to apply the adhesive/plastic layer taught in Peer to the outer packaging taught in Cavagna in order to improve the tear resistance of the packaging.

Cavagna relates to a method for making coated and printed packaging material on a printing press. Unbleached paper and paperboard for use as outer packaging material is coated and printed on a printing press. The unbleached raw stock must be relatively smooth and nonporous prior to coating. The coating formulation preferably comprises a mixture of temperature insensitive binders and pigments.

It is custom in the industry to finish at least one surface with a white coating, to permit the printing of the naturally brown, rough surface of the unbleached board. One method has been to coat one surface of the board in an off machine coating process with a coating composition comprising latex, clay and titanium dioxide. In other cases, an outer thin layer of high-quality label paper or a plastic film have been laminated to one surface of the unbleached paper-board to provide a printable surface.

Containers of corrugated packages and single ply folding cartons employ white surfaced (clay coated) unbleached kraft board.

Coated board is produced on a printing press by taking an unbleached and uncoated kraft raw stock and coating it by printing one or more coating layers on one surface, and subsequently printing the coated surface on the same or a different press. The process is carried out using either flexographic or gravure presses.

Peer relates to a composite material for secondary container packaging material for use in six pack can wraps, six pack bottle carriers, twelve pack carriers, comprising a composite of a paper material laminated to a plastic film. The plastic film provides tear resistance to the composite. Natural kraft paper and recycled paper are preferred. The plastic film is preferably formed of polyethylene terephthalate, polyethylene, polyvinyl chloride, polypropylene or cellophane. Preferred films permit reverse printing on their inner surface. Adhesives bond film to the paper. Film may be metallized to produce a foil effect.

Peer relates to an inner paper, outer decorative plastic film and adhesive layer between. Most secondary container packaging is made of paper or paperboard. The

board is usually made from virgin, strong fiber. A smooth white surface is coated to the carrier board with a white clay titanium dioxide-layer mixture. The white surface is added to permit decoration of the naturally brown, rough surface of the carrier board. In some cases, a white outer surface is provided through the lamination of an outer thin layer of high quality label paper to a thicker backing material.

Peer teaches laminating a paper material, such as kraft paper or recycled board to a transparent film.

Claim 1 requires a two-ply base labele comprised of a bottom ply and a top ply. The bottom ply is comprised of unbleached cellulosic fibers and the top ply is comprised of bleached or brightened cellulosic fibers. A layer of paper or film is attached to the top ply with a layer of adhesive. The adhesive contains no pigment and the top surface of the further layer has no coating.

Cavagna does not teach a two-ply base comprised of a bottom ply comprised of unbleached cellulosic fibers and a top ply comprised of bleached or brightened cellulosic fibers. Cavagna teaches packaging materials comprised of unbleached Kraft paperboard which is surfaced treated on at least one side with a white coating. A layer of paper or film attached to the top ply with a layer of adhesive is also required by claim 1. Cavagna teaches adding paper or a plastic to the unbleached paperboard which is different than claim 1 which teaches adding a layer of paper or film to the top ply which comprises bleached or brightened cellulosic fibers. Peer teaches a plastic film that can be applied to outer packaging paper materials. However, the combination of Peer and Cavagna does not teach a two ply base layer having the layer of paper or film attached to the top ply. Neither Cavagna nor Peer discloses a two ply base with the top ply. Therefore Claim 1 is not obvious over Cavagna in view of Peer.

Claim 6 requires that the top ply have enhanced smoothness. Neither Cavagna nor Peer discloses a two ply base with the top ply having an enhanced smoothness. Therefore Claim 6 is not obvious over Cavagna in view of Peer.

Claim 7 requires that the adhesive is a barrier for moisture, oil and odor. Claim 7 is not obvious over Cavagna in view of Peer because they do not disclose a two-ply base, the bottom ply comprising unbleached cellulosic fibers and the top ply comprising

bleached or brightened cellulosic fibers; a layer of paper or film attached to the top ply with a layer of adhesive.

Claim 8 requires that the paper sheet is a publication grade paper. Claim 8 is not obvious over Cavagna in view of Peer because they do not disclose a two-ply base, the bottom ply comprising unbleached cellulosic fibers and the top ply comprising bleached or brightened cellulosic fibers; a layer of paper or film attached to the top ply with a layer of adhesive.

Claim 9 requires that the paper sheet is a labele stock grade. Claim 9 is not obvious over Cavagna in view of Peer because they do not disclose a two-ply base, the bottom ply comprising unbleached cellulosic fibers and the top ply comprising bleached or brightened cellulosic fibers; a layer of paper or film attached to the top ply with a layer of adhesive.

Claim 10 requires that the paper sheet has a coating. Claim 10 is not obvious over Cavagna in view of Peer because they do not disclose a two-ply base, the bottom ply comprising unbleached cellulosic fibers and the top ply comprising bleached or brightened cellulosic fibers; a layer of paper or film attached to the top ply with a layer of adhesive.

Claim 11 requires that the coating is selected from clay and protein and/or starch or titanium dioxide. Claim 11 is not obvious over Cavagna in view of Peer because they do not disclose a two-ply base, the bottom ply comprising unbleached cellulosic fibers and the top ply comprising bleached or brightened cellulosic fibers; a layer of paper or film attached to the top ply with a layer of adhesive.

Claim 12 requires that the film is a tear resistant film. Claim 12 is not obvious over Cavagna in view of Peer because they do not disclose a two-ply base, the bottom ply comprising unbleached cellulosic fibers and the top ply comprising bleached or brightened cellulosic fibers; a layer of paper or film attached to the top ply with a layer of adhesive.

Claim 13 requires that the film is reverse printed. Claim 13 is not obvious over Cavagna in view of Peer because they do not disclose a two-ply base, the bottom ply comprising unbleached cellulosic fibers and the top ply comprising bleached or

brightened cellulosic fibers; a layer of paper or film attached to the top ply with a layer of adhesive.

With respect to claim 3, Cavagna does not explicitly teach what materials may be utilized in the production of the paperboard layer. However, Peer teaches that outer packaging is usually made from kraft pulp or recycled paper pulp. Thus, it would have been obvious to one of ordinary skill in the art to make the paperboard taught in Cavagna from either virgin kraft pulp or recycled pulp because Peer teaches said materials are traditionally used in the production of outer packaging.

Claim 3 requires that the unbleached cellulosic fibers are selected from unbleached virgin Kraft pulp and unbleached recycled pulp.

Claim 3 is not obvious over Cavagna in view of Peer because they do not disclose a two-ply base, the bottom ply comprising unbleached cellulosic fibers and the top ply comprising bleached or brightened cellulosic fibers; a layer of paper or film attached to the top ply with a layer of adhesive.

With respect to claim 2, the examiner takes the position that the graphics produced using the adhesive/polymer overlay taught in Peer are "high quality" since they are sufficient for consumer appeal. The examiner further takes the position that the polymer ply taught in Peer meets the "enhanced smoothness" limitation of claim 6 because Peer teaches the top ply should be smooth. The examiner also takes the position that any adhesion would meet the "barrier for moisture, oil and odor" limitation of claim 7 because any substance will restrict moisture, oil, and odor transmission to some extent.

Claim 2 requires that the sheet is capable of making products having high quality graphics. Claim 2 is not obvious over Cavagna in view of Peer because they do not disclose a two-ply base, the bottom ply comprising unbleached cellulosic fibers and the top ply comprising bleached or brightened cellulosic fibers; a layer of paper or film attached to the top ply with a layer of adhesive.

The examiner takes the position that the laminate taught in Cavagna meets the limitations of claim 4. Specifically, Cavagna teaches a paperboard coated with a "thin" paper layer. Paperboard is generally understood to refer to cellulose fiber materials that are thicker than paper. With respect to claim 8, the examiner takes the position that the label grade paper taught in Cavagna is a publication grade paper. The examiner relies

upon Applicant's disclosure on page 11 of the specification (last paragraph) where label grades are listed as a type of publication grade paper.

Amended claim 4 requires that the bottom ply is thicker than the top ply.

Claim 4 is not obvious over Cavagna in view of Peer because they do not disclose a two-ply base, the bottom ply comprising unbleached cellulosic fibers and the top ply comprising bleached or brightened cellulosic fibers; a layer of paper or film attached to the top ply with a layer of adhesive. The Examiner states that Cavagna teaches a paperboard coated with a "thin" paper layer. However, the claims require a two-ply base layer.

The Examiner has rejected claim 5 under 35 U.S.C. 103(a) as being unpatentable over Cavagna (US 4,898,752) in view of Peer (US 4,254,173), as applied to claims 1-4 and 6-13. Cavagna in view of Peer is relied upon as above, but neither reference teaches that the label paper should have a brightness of above 60ISO. However, it is known in the art to increase the brightness of a printing/imaging paper in order to enhance the image clarity. Thus, it would have been obvious to one of ordinary skill in the art to increase the brightness of the label paper taught in Cavagna in order to enhance the image clarity of the resulting secondary package material.

Claim 5 requires that the top ply have a brightness of above 60ISO.

Claim 5 is not obvious over Cavagna in view of Peer because they do not disclose a two-ply base, the bottom ply comprising unbleached cellulosic fibers and the top ply comprising bleached or brightened cellulosic fibers and a layer of paper or film attached to the top ply with a layer of adhesive. Neither Cavagna nor Peer disclose a top ply.

The Examiner has rejected claim 14 under 35 U.S.C. 103(a) as being unpatentable over Cavagna (US 4,898,752) in view of Peer (US 4,254,173), as applied to claims 1-4 and 6-13. Cavagna in view of Peer is relied upon as above, but neither reference teaches that the tear resistant film taught in Peer may be pigmented. However, matters relating to ornamentation only which have no mechanical function cannot be relied upon to patentably distinguish the claimed invention from the prior art. Thus, the examiner takes the position that it would have been obvious to one of ordinary skill in the art to apply pigment to the tear resistant film taught in Peer in order to obtain the desired aesthetic effect.

Claim 14 requires that the film contains a pigment. Claim 14 is not obvious over Cavagna in view of Peer because they do not disclose a two-ply base, the bottom ply comprising unbleached cellulosic fibers and the top ply comprising bleached or brightened cellulosic fibers; a layer of paper or film attached to the top ply with a layer of adhesive.

The Examiner has rejected claims 15-19 under Cavagna (US 4,898,752) in view of Peer (US 4,254,173), as applied to claims 1-4 and 6-13, and further in view of Confer (US 3,603,501). Cavagna in view of Peer is relied upon as above. Cavagna teaches that the paperboard core may be finished on both surfaces with a label paper. The examiner takes the position that an inner label paper would read on the claimed moisture absorbent layer. Cavagna does not teach that such label papers are adhered to the paperboard core. However, Confer teaches that secondary packaging materials are generally made by adhering the label paper to the paperboard core. Thus, it would have been obvious to one of ordinary skill in the art to apply adhesive between the label paper and the paperboard core taught in Cavagna because Confer teaches that such a laminating technique is the traditional method by which secondary packaging is processed. The examiner takes the position that any adhesive is a barrier to moisture to some extent.

Confer relates to a carton having tear strips for cans. The invention relates to an open end carton of six pack type having longitudinal slits on corner edges, one for each can. Reinforcing strand surrounds each end of container adjacent to margin. Carton blanks are made by laminating continuous label web and backing web wide enough for several blanks with longitudinal reinforcing strands between webs and spaced laterally at margins and lines of division of master strip.

The carton is made from a single substantially rectangular blank of paperboard folded along appropriate lateral lines to produce a top wall, and two side walls. The blank is a lamination of an outer thin layer of high quality label paper to receive desired printed matter and an inner considerably thicker layer of backing paper to provide strength and reasonable rigidity.

Claim 15 requires an additional layer of paper or board is attached to the bottom ply with a second adhesive layer. Claim 15 is not obvious over Cavagna in view of Peer and further in view of Confer. None of these patents alone or in combination discloses a

two ply base, the bottom ply comprising unbleached cellulosic fibers and the top ply comprising bleached or brightened cellulosic fibers; a layer of paper or film attached to the bottom ply with a layer of adhesive and an additional layer of paper or board attached to the bottom ply with a second adhesive. Cavagna teaches a paperboard coated with a thin paper layer. Therefore, claim 15 is not obvious over the prior art references.

Claim 16 requires that the additional layer is comprised of unbleached cellulosic fibers selected from unbleached virgin Kraft pulp and unbleached recycled pulp. Claim 16 is not obvious over Cavagna in view of Peer and further in view of Confer. None of these patents alone or in combination discloses a two ply base, the bottom ply comprising unbleached cellulosic fibers and the top ply comprising bleached or brightened cellulosic fibers; a layer of paper or film attached to the bottom ply with a layer of adhesive and an additional layer of paper or board attached to the bottom ply with a second adhesive. Cavagna teaches a paperboard coated with a thin paper layer. Therefore, claim 16 is not obvious over the prior art references.

Claim 17 requires that the additional layer of claim 15 is a moisture absorbent layer. Claim 17 is not obvious over Cavagna in view of Peer and further in view of Confer. None of these patents alone or in combination discloses a two ply base, the bottom ply comprising unbleached cellulosic fibers and the top ply comprising bleached or brightened cellulosic fibers; a layer of paper or film attached to the bottom ply with a layer of adhesive and an additional layer of paper or board attached to the bottom ply with a second adhesive. Cavagna teaches a paperboard coated with a thin paper layer. Therefore, claim 17 is not obvious over the prior art references.

Claim 18 requires that the second adhesive layer is not significantly absorbed by the moisture absorbent layer and acts as a moisture barrier. Claim 18 is not obvious over Cavagna in view of Peer and further in view of Confer. None of these patents alone or in combination discloses a two ply base, the bottom ply comprising unbleached cellulosic fibers and the top ply comprising bleached or brightened cellulosic fibers; a layer of paper or film attached to the bottom ply with a layer of adhesive and an additional layer of paper or board attached to the bottom ply with a second adhesive. Cavagna teaches a paperboard coated with a thin paper layer. Therefore, claim 18 is not obvious over the prior art references.

Claim 19 requires that the second adhesive layer is selected from hot melt glues or glues that are moisture and/or oil resistant. Claim 19 is not obvious over Cavagna in view of Peer and further in view of Confer. None of these patents alone or in combination discloses a two ply base, the bottom ply comprising unbleached cellulosic fibers and the top ply comprising bleached or brightened cellulosic fibers; a layer of paper or film attached to the bottom ply with a layer of adhesive and an additional layer of paper or board attached to the bottom ply with a second adhesive. Cavagna teaches a paperboard coated with a thin paper layer. Therefore, claim 19 is not obvious over the prior art references.

The Examiner has rejected claims 15-19 under Cavagna (US 4,898,752) in view of Peer (US 4,254,173), as applied to claims 1-4 and 6-13, and further in view of Hall (US 4,441,626). Cavagna in view of Peer is relied upon as above, but neither reference teaches that a wicking material may be attached to the interior of packaging material. However, Hall teaches that a singled sided corrugated cardboard medium may be glued to the interior of a package in order to absorb liquids from the packaged material. The wicking cardboard is attached to the package with a moisture resistant adhesive. Thus, it would have been obvious to one of ordinary skill in the art to adhere a single sided corrugated cardboard to the interior of the secondary packaging material taught in Cavagna in order to absorb undesirable liquids around the packaged material.

Hall relates to a pizza box. A box is formed from a unitary, double-sided corrugated cardboard blank having a plurality of scored lines which enable a set up in box form. A bottom panel of the box has cemented thereto a single-sided, fluted corrugated cardboard medium with the fluted side facing upwardly. A moisture resistant glue is used between the smooth faces of the fluted corrugated medium and the confronting liner of the blank to provide an impenetrable barrier which prevents grease from penetrating through the box.

At work station 90, a bleached white medium is corrugated into upper flutes 97. The bleached medium 97, which comes into direct contact with the pizza is sanitary, and has a clean fresh look (as computed to conventional brown Kraft paper). The medium 97 is then glued to a liner 99 pulled from a roll 100 of heavy Kraft paper. The bleached

white flutes 97 are preferably adhered to liner 99 by a regular water resistant starch adhesive.

At work station 92, an unbleached Kraft paper medium is corrugated to form lower flutes 98. The E-fluted medium 98 is then glued to a heavy Kraft paper liner 104.

The two, single-faced corrugated cardboards, formed at work stations 90, 92 are transported to another work station 96 where the smooth faces of the liner are laminated together, with a moisture-resistant glue which forms the moisture barrier.

Claims 15 and the claims which depend on it, claims 16-19 are not obvious over Cavagna in view of Peer and further in view of Hall. None of these references alone or in combination discloses a two ply base, the bottom ply comprising unbleached cellulosic fibers and the top ply comprising bleached or brightened cellulosic fibers; a layer of paper or film attached to the bottom ply with a layer of adhesive and an additional layer of paper or board attached to the bottom ply with a second adhesive. Cavagna teaches a paperboard coated with a thin paper layer. Therefore, claims 15-19 are not obvious over the prior art references.

Hall relates to a pizza box and does not teach the two-ply base layer having an additional layer of paperboard attached with adhesives to both the top ply and bottom ply.

The Examiner has rejected claims 20-23 under 35 U.S.C. 103(a) as being unpatentable over Cavagna (US 4,898,752) in view of Peer (US 4,254,173), as applied to claims 1-4 and 6-13 above, and further in view of Knudson. (US 4,913,773). Cavagna in view of Peer is relied upon as above, but neither reference teaches that the paperboard core may comprise more than one layer of paperboard. However, Knudson teaches a multi-ply paperboard comprising one ply of high bulk fibers sandwiched between at least two plies of conventional papermaking fibers. A bonding agent may be utilized between the layers. Said paperboard has superior stiffness in comparison to traditional paperboard. Stiffness is important in folding carton applications. Thus it would have been obvious to one of ordinary skill in the art to utilize the multiply paperboard taught in Knudson in the laminate taught in Cavagna to increase the stiffness of the laminate.

Knudsen relates to a method of producing a multi-ply paperboard comprising at least one ply high bulk fibers sandwiched between at least two plies of conventional papermaking fibers. High bulk fibers characterized by twists, kinks and curls are

produced by mechanical deformation without substantial fibrillation or breakage of the fibers.

The invention relates to a method for the manufacture of a multi-ply paperboard mat, and to an improved multi-ply paperboard not having premium fiber outer plies and an interior ply of high bulk fibers.

Claim 20 relates to a laminated sheet comprising a pair of two-ply base layers each comprised of a bottom ply and a top ply. The bottom ply is comprised of unbleached cellulosic fibers and the top ply is comprised of bleached or brightened cellulosic fibers. The adhesive layer is disposed between the base layers, adhering the bottom plys of each base layer together so that the top plys remain visible.

Claim 20 is not obvious over Cavagna in view of Peer and further in view of Knudson. None of the prior art references alone or in combination disclose a pair of two-ply base layers each comprised of a bottom ply and a top ply wherein the bottom ply is comprised of unbleached cellulosic fibers and the top ply is comprised of bleached or brightened cellulosic fibers. The adhesive layer is disposed between the base layers adhering the bottom plies in each base layer together. Knudson relates to a method of producing multiply paperboard wherein at least one ply of high bulk fibers is sandwiched between at least two plies of conventional papermaking fibers. The combination of Cavagna, Peer and Knudson does not make claim 20 obvious.

Claim 21 requires that the sheet is used to make products having high quality graphics. For the reasons stated above for claim 20, claim 21 is not obvious over Cavagna in view of Peer and Knudson.

Claim 22 relates to the composite sheets of claim 1 further comprising a second twp-ply base layer having a bottom ply and a top ply. The bottom ply is comprised of unbleached cellulosic fibers and the top ply is comprised of bleached or brightened cellulosic fibers. The bottom ply of the second twp-ply base layer is attached to the bottom ply of the first two-ply base layer with a second layer of adhesive. For the reasons stated above for claim 20, claim 22 is not obvious over Cavagna in view of Peer and Knudson.

Claim 23 relates to the composite sheet of claim 22 and further comprises a layer attached to the top ply of the second two-ply base layer with a layer of adhesive. The layer has a top and bottom surface. The layer consists of paper or film. The layer of adhesive contains no pigment and the top surface of the layer has no coating. For the reasons stated above for claim 20, claim 23 is not obvious over Cavagna in view of Peer and Knudson.

Consideration and allowance of the application are earnestly solicited.

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